

What is claimed is:

1. A navigation system for a position self control robot including a main body having a locomotion unit, the navigation system comprising:

5 two-dimensional (2D) barcodes formed at predetermined intervals on a floor having a predetermined size, the 2D barcodes respectively having different unique coordinate values;

a barcode reader installed at a predetermined position in a lower portion of the main body to read a 2D barcode on the floor; and

10 a control unit installed at the main body to be electrically connected with the barcode reader, the control unit recognizing absolute coordinates within a predetermined area, which are stored in memory, based on a unique coordinate value of the 2D barcode read by the barcode reader, applying the absolute coordinates to a programmed locomotion algorithm, and controlling the locomotion unit to move the main body.

2. The navigation system of claim 1, further comprising a light emitting device installed near the barcode reader to emit light having a predetermined wavelength range to the floor.

20 3. The navigation system of claim 2, wherein the light emitting device emits light having a wavelength range between 300 nm and 850 nm.

25 4. A floor material for providing absolute coordinate information to enable a position self control robot to recognize absolute coordinates in a move space, the floor material comprising at least one first sheet made by reversely printing a plurality of two-dimensional (2D) barcodes respectively having different unique coordinate values at predetermined intervals on a rear side of a transparent material having a

predetermined area and by forming an adhesive layer on the rear side of the transparent material so that the 2D barcodes are normally seen from a surface of the floor material.

5        5.    The floor material of claim 4, wherein the 2D barcodes are printed using one of visible color ink and invisible secret ink.

10        6.    The floor material of claim 4, wherein the 2D barcodes are arranged at equal intervals in a matrix pattern.

15        7.    The floor material of claim 4, wherein the 2D barcodes are arranged at equal intervals along a plurality of concentric circles.

20        8.    A floor material for providing absolute coordinate information to enable a position self control robot to recognize absolute coordinates in a move space, the floor material comprising a plurality of second sheets each made by reversely printing a single two-dimensional (2D) barcode having a unique coordinate value on a rear side of a transparent material having a predetermined area and by forming an adhesive layer on the rear side of the transparent material so that the 2D barcode is normally seen from a surface of the floor material.

25        9.    The floor material of claim 8, wherein the 2D barcode is printed using one of visible color ink and invisible secret ink.

10.    The floor material of claim 9, wherein the second sheets are arranged at equal intervals in a matrix pattern.

30        11.   The floor material of claim 9, wherein the second sheets are arranged at equal intervals along a plurality of concentric circles.

12. A floor material for providing absolute coordinate information to enable a position self control robot to recognize absolute coordinates in a move space, the floor material comprising a plurality of two-dimensional (2D) barcodes printed on a surface thereof at predetermined intervals, the 2D barcodes respectively having different unique coordinate values.

13. The floor material of claim 12, wherein the 2D barcodes are printed using one of visible color ink and invisible secret ink.

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14. The floor material of claim 12, wherein the 2D barcodes are arranged at equal intervals in a matrix pattern.

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15. The floor material of claim 12, wherein the 2D barcodes are arranged at equal intervals along a plurality of concentric circles.

16. The floor material of claim 12, further comprising a coating sheet that is made of a transparent material and is bonded to the surface on which the 2D barcodes are printed.